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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/632,484

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Rajkumar Jalan

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TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER

LIN, WEN TAI

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/632,484	<b>Applicant(s)</b> JALAN ET AL.	
	<b>Examiner</b> Wen-Tai Lin	<b>Art Unit</b> 2454	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5-7,9-13,17,21,22,25-29,33-41,43-51,53-62 and 64-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,7,9-13,17,21,25-29,33-34,36-41,43-44,46-51,53-55,57-61 and 64-67 is/are rejected.
- 7) ☒ Claim(s) 6,22,35,45 and 56 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1, 5-7, 9-13, 17, 21-22, 25-29, 33-41, 43-51, 53-62 and 64-67 are presented for examination. Claims 64-67 are newly added. Claims 42, 52, and 63 have been withdrawn.
2. Regarding the amendment of Figure 4, the examiner called Applicant's representative, Mr. Edward C. Kwok, on August 3, 2009 for rationale of the change (i.e., swapping the order of Ethernet header and IP header in the IP multicast packet). In the examiner's opinion, the cited passage in the Specification (at page 6, lines 23-28) does not support that such a change is necessary, and as such there is an issue of adding new matter to the specification. Mr. Kwok explained that the Ethernet header was put up there for completeness to indicate its layer-2 destination address while the packet traverses each Ethernet hub along the IP multicast paths in the VPLS network. The explanation supports the examiner's view that encapsulation of the IP layer (i.e., layer-3) within a layer-2 header (such as Ethernet) is an inherent process in view of the popular OSI (Open System Interconnection) model and Widget teaches the same technique used in the same communication environment. For this reason, the amendment of Figure 4 is granted and Mr. Kwok's help in clarifying the above issue is hereby acknowledged.
3. The text of those sections of Title 35, USC code not included in this action can be found in the prior Office Action.

***Claim Rejections - 35 USC § 102***

4. Claims 1, 5, 13, 17, 21, 29, 33-34, 41, 43-44, 51, 53-55 and 62 are rejected under 35 U.S.C. 102(e) as being anticipated by Wiget et al.[U.S. Pat. 6640251].
5. Wiget et al was cited in the previous office action.
6. As to claim 1, Wiget teaches the invention as claimed including: a method comprising:  
an Internet Protocol (IP) multicast group address to a virtual private LAN service [e.g., col.3, lines 29-39; Figs. 1a and 1b; col.4, lines 17-25 and 48-50];  
encapsulating a data packet of the virtual private LAN service in an IP packet designating the IP multicast group address [e.g., Figs. 2a and 2b] and including an Ethernet header designating a multicast Ethernet address associated with the IP multicast group address [e.g., Figs. 3 and 5; col.4, lines 17-25 and 48-50; col. 5, lines 27-56; i.e., when it comes to IP multicast over VPLS, the IP multicast group address is inherently mapped to the Ethernet destination MAC address along the layer-2 hubs]; and  
transmitting the IP packet using an IP multicast routing protocol [e.g., col.5, lines 24-32].
7. As to claim 5, Wiget further teaches that the Internet Protocol multicast group address associated with the virtual private LAN service is within a range set aside for use with virtual private LAN services [e.g., col.3, lines 1-4; col.4, lines 17-25; note that an IP multicast group address, which is used for identifying the members of an IP multicast group, is inherently

different from the nominal IP addresses (or VPN Id) assigned to the VPN endpoints; i.e., the IP multicast group number is obtained from a range set aside (or, other than the typical IP addresses) for such unique purpose – see also col. 1, lines 58-67].

8. As to claim 13, Wiget further teaches that the virtual private LAN service is part of a Layer 2 virtual private network [e.g., col. 3, lines 10-15].

9. As to claims 17, 21, 29, 33-34, 41, 43-44, 51, 53-55 and 62, since the features of these claims can also be found in claims 1, 5 and 13, they are rejected for the same reasons set forth in the rejection of claims 1, 5 and 13 above.

#### Claim Rejections - 35 USC § 103

10. Claims 7, 12, 28, 36, 40, 46, 50, 57, 61 and 64-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiget et al.(hereafter "Wiget")[U.S. Pat. 6640251], as applied to claims 1, 5-6, 13, 17, 21, 29, 33-34, 41, 43-44, 51, 53-55 and 62 above, further in view of Lee [U.S. PGPub 20040165600].

11. As to claims 7 and 64, Wiget does not specifically teach that the method further comprises distributing the Internet Protocol multicast group address using a name server.

However, in the same field of endeavor, Lee teaches using a domain name server (DNS) to obtain remote site addresses.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's teaching in Wiget's system because DNS already exists in the Internet world and it would be efficient to add the IP multicast group addresses search as part of the globally available DNS service, thereby allowing the IP multicast group members to remember the group name instead of a numerical number [e.g., Lee: paragraphs 45-47].

12. As to claim 12, Lee teaches that the method further comprises providing the virtual private LAN service in the service provider's network using an Internet Protocol/Multi-protocol label switching service [e.g., paragraph 15 and claim 4].

13. As to claims 28, 36, 40, 46, 50, 57, 61 and 65-67 since the features of these claims can also be found in claims 1, 7, 12, 17, 33, 43, 53 and 64 they are rejected for the same reasons set forth in the rejection of claims 1, 7, 12, 17, 33, 43, 53 and 64 above.

14. Claims 9-11, 25-27, 37-39, 47-49 and 58-60 are rejected under U.S.C. 103(a) as being unpatentable over Wiget [U.S. Pat. 6640251], further in view of Ballardie [RFC 2201, September 1997].

15. As to claims 9-11, 25-27, 37-39, 47-49 and 58-60, Wiget is silent about applying IP multicast routing protocols such as source-based routing protocol and core-based routing protocol, which create distribution tree for distributing the IP encapsulated customer packet for the virtual private LAN service.

However, Ballardie discloses the nature and the applicability of both the source-based and core-based routing protocols, which create shared trees in a network environment [see sections 3-4]. Ballardie further teaches that the source-based routing protocol is suitable for densely populated receiving nodes such as a local area network, while the core-based routing protocol is more suitable for sparsely populated receiving nodes such as wide-area network and the Internet.

It would have been obvious to one of ordinary skill in the art that both the source-based and core-based routing protocols can be applied in Wiget's system because Wiget's virtual private LAN segments (VPLS) comprises both densely populated LAN segments and sparsely populated virtual private networks across a wide-area network such as the Internet [e.g., col. 1, line 40 – col. 2, line 14].

16. Claims 6, 22, 35, 45 and 56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Applicant's arguments with respect to the currently rejected claims on 5/15/09 have been considered but they are not deemed to be persuasive.

18. In the remarks Applicant argues that: (1) Widget does not teach “an Ethernet designating a multicast Ethernet address associated with IP multicast group address.” (e.g., claim 1); and (2) Widget does not teach the “IP multicast group address ... is within a range set aside for use with virtual private LAN services.” (e.g., claim 5).

19. Initially, Applicant is reminded that Widget's Fig. 1a is equivalent to Applicant's Fig. 1, wherein Widget also teaches using IP multicast method to distribute packets across an IP backbone connecting a service provider's VPLS network, and wherein the multicast group membership is managed by the well known IGMP (Internet Group Management Protocol). The mere difference between the explicit teachings is that Widget uses VRP packets, instead of a custom packet, as an example to show the efficacy of IP multicast group distribution. Thus, simply based on the fact that: (1) Applicant and Widget's network environments are identical and (2) the issues to be resolved and the techniques Applicant and Widget adopt are the same, it is clear to an ordinary skill in the art that, except for some minor differences in assigning group identifiers, the two systems are essentially equivalent, if not identical.

As to point (1): both Widget's and Applicant's teachings lack the kind of details to shore up any differences. In particular, before Applicant requested amendment of Fig. 4, the Ethernet header had been encapsulated within an IP multicast header, which led the examiner to point out a fact that Widget's target nodes are connected to Ethernet LANs. And now Applicant's argument is moot because it has been clarified (see paragraph #2 of this instant office action) that the Ethernet header, as shown in the amended Fig. 4, is in fact for an inherent layer-2 activity when an IP multicast packet traverses the IP backbone over a VPLS network.

As to point (2): Applicant is reminded that the claimed limitation is "'IP multicast group address ... is within a range set aside for use with virtual private LAN services.'" That is, since the IP multicast group address must be distinct from any other identifiers or addresses that are being used in the VPLS network, inherently the IP multicast group address must be selected from



a group of numbers that have not been assigned to the VPLS channels or nodes (e.g., a range set aside for use with the VPLS).

For at least the foregoing reasons, it is submitted that the prior art of record reads on the claims.

20. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

21. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Tai Lin whose telephone number is (571)272-3969. The examiner can normally be reached on Monday-Friday(8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(571) 273-8300 for official communications; and

(571) 273-3969 for status inquires draft communication.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Tai Lin

August 9, 2009

/Wen-Tai Lin/

Primary Examiner, Art Unit 2454